

**ADDITIONAL COMMENTS**  
**FEASIBILITY STUDY WORK PLAN FOR THE LOWER PASSAIC RIVER STUDY AREA**  
**REMEDIAL INVESTIGATION/FEASIBILITY STUDY**  
**DATED DECEMBER 23, 2014**

<b><u>No.</u></b>	<b><u>Page No.</u></b>	<b><u>Specific Comments</u></b>
1	Section 1.1.1, Page 1-2	Please modify the first sentence of this section. There appears to be a typo.
2	Section 1.2.2, Page 1-9, third paragraph, third sentence	Please delete the reference to Table 1-2 as this table was removed from the report.
3	Section 8, Page 8-1, first paragraph	EPA responded to the CPG's 1/24/2014 letter requesting modification of interim deliverables for the FS on February 18, 2014. As such, there is no need to assume EPA's position on these requests. Instead, reference can be made to our 2/18 letter and the rest of Section 8 should be consistent with the letter.
4	Section 8.1, Page 8-1	EPA's February 18, 2014 letter states that the RAO/PRG Technical Memorandum should be submitted by May 2014. Please let us know the status of this interim submittal.
5	Section 8.2, Page 8-1, first paragraph	At the end of the third sentence add the phrase "for review and possible additional comment."
6	Table 1-1	<p>Please explain why the following data sets were removed from the table:</p> <ol style="list-style-type: none"> <li>1. Under Sediments: The TSI 1995 RI Sampling program (RM 1-6.7; 100 cores collected)</li> <li>2. Under Ecological/Tissue Sample: <ol style="list-style-type: none"> <li>a. TSI 1999-2001 RI/ESP biota sampling program (RM 1-6.9; fish, crab, and mussel tissue samples collected from 154 locations)</li> <li>b. CARP 2000-2004 harbor fish/crustacean collection (RM 2.6)</li> <li>c. EPA 2000, 2002 EMAP/REMAP within the National Coastal Assessment – Northeast/New Jersey Coast (crab, lobster, and fish tissue collection)</li> </ol> </li> </ol>

**COMMENTS**  
**FEASIBILITY STUDY WORK PLAN FOR THE LOWER PASSAIC RIVER STUDY AREA**  
**REMEDIAL INVESTIGATION/FEASIBILITY STUDY**  
**REVISION 3, DATED AUGUST 6, 2014**

No.	Page No.	EPA 4/3/2014 Comment	CPG 8/6/2014 Response	EPA 10/30/2014 Response	CPG 12/23/2014 Response	Assessment of Response
13	Section 1.2.1	<p>The concepts/definitions for "remedial action level" (RAL), and "surface weighted average concentrations" (SWACs) require a reference within the context of Superfund Remedial Actions.</p> <p>In addition, prior to approval for development and use of RALs and SWACs in this study, clarification is needed on the underlying mechanism for their development, along with their connection to Remedial Action Objectives, risk-based threshold concentrations (RBTC) and Preliminary Remediation Goals (PRGs) within the context of the Superfund Program and this project.</p> <p>Please note that the RAL definition that the concept and application is still under development and that inclusion of RALs has not been approved by EPA for inclusion in the FS, but will be further evaluated upon submission of interim FS technical memorandums. Please see specific comment #48 for further discussion on this topic.</p>	<p>RALs and SWACs have been used at several CERCLA sites. Examples of the use of RALs and SWACs include:</p> <p>Fox River ROD – OU1 and OU2, (12/02), p. 83:</p> <p>"The term Remedial Action Level (RAL) refers to PCB concentrations in sediment used to define an area or volume of contaminated sediment that is targeted for remediation."</p> <p>"The SWAC in this instance is less than the RAL because the SWAC is calculated as an average concentration over the entire OU 1, after the removal of sediment from discrete areas ("deposits") which are above the RAL and includes averaging over areas in which there are surface concentrations less than the RAL."</p> <p>Lower Duwamish Waterway Proposed Plan (2/28/13), p. 51:</p> <p>"Remedial Action Levels (RALs) are contaminant-specific sediment concentrations that will be used to identify specific areas of sediments that require active remediation (dredging, capping, enhanced natural recovery [ENR], or a combination thereof), taking into consideration the human health and ecological risk reduction that could be achieved by the different remedial technologies....</p> <p>"Each alternative has its own set of sediment RALs. Sediment RALs reflect a range in risk reduction to be achieved over time, in the projected rate of natural recovery, and in which remedial technologies are used."</p> <p>Lower Duwamish Waterway Feasibility Study (10/31/12, p. 1-9):</p> <p>"Sediment concentrations are expressed and evaluated in the FS in two ways: as individual point concentrations or as SWACs. Risk-based threshold concentrations were developed in the RI</p>	<p>The concept of remedial action levels (RALs) is fairly straight forward (i.e., clean up contamination above the RAL to achieve a specific remedial goal which is generally lower than the RAL). At some point, both the underlying mechanism for deriving RALs for the LPRSA and how RALs are directly linked to the project-specific, risk-based remediation goals (such as PRGs), must be fully described.</p> <p>The use of surface weighted average concentrations (SWACs) is dependent on factors such as exposure area and contaminant distribution.</p> <p>Therefore, EPA recommends that the definition be revised to read:</p> <p>"SWACs are similar to a simple arithmetic average of point concentrations over a defined area, except that each individual concentration value is weighted in proportion to the area it represents, thereby minimizing the influence of spatially biased sampling. SWACs have been used at several other CERCLA contaminated sediment sites (e.g., Fox River [WDNR and USEPA 2002] and Lower Duwamish Waterway [EPA 2013b]) and may be used to evaluate reductions in sediment concentrations. The selected area over which a SWAC is applied is specific to the receptor being evaluated. For example, river-wide SWACs may be appropriate for estimating risks attributable to human consumption of fish or shellfish that range over wide areas. SWACs may also be calculated for smaller exposure areas for receptors with smaller home ranges."</p> <p>Additionally, the Remedial Alternative Screening technical memorandum has not yet been provided to EPA. Please ensure any reference in the document is corrected. The application of RALs for this project, which includes how RALs are derived and relate to</p>	<p>Definition of surface weighted average concentrations revised as requested.</p> <p>A statement indicating that the development and application of RALs will be documented in the Remedial Alternative Screening technical memorandum has been added to Section 5.2.</p>	<p>The definition of SWAC was revised, but the word "removing" was not replaced with "minimizing" in the phrase "removing the influence of spatially biased sampling". The use of SWACs cannot completely eliminate the influence of spatially biased sampling but rather minimize the bias associated with such sampling. Please change "removing" to "minimizing."</p>

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			<p>and may be expressed as either point concentrations or SWACs.”</p> <p>Grasse River ROD (4/13). p. 29:</p> <p>EPA chose an action level of 1 mg/kg for PCBs in sediment based on the action level’s projected ability to achieve EPA’s PCB target concentrations in fish for protection of human health, and to achieve the remedial goal for PCBs in fish that is protective of ecological receptors.</p> <p>These references to use of RALs and SWACs within the context of Superfund Remedial Actions were provided in Sections 1.21 and 5.2 of the Work Plan.</p> <p>The mechanism for the development and application of RALs and their connection to RAOs, RBTCs, and PRGs was presented in the Remedial Alternative Screening technical memorandum.</p> <p>The definition of the RAL does not depend on EPA approval of the concept. No change was made to the definition.</p>	<p>risk-based levels and the proposed RALs themselves will require EPA review and approval.</p>		
14	Section 1.2.1, Page 1-7	<p>This section states that “PRGs will be expressed as sediment concentrations for the risk drivers, and will be established considering risk-based threshold concentrations (RBTCs, ARARs, background concentrations, and PQLs).”</p> <p>Further clarification is needed, in that protective tissue-based concentrations will also be needed for guiding remedial goals and measuring remedy success through long term monitoring.</p>	<p>Text was revised to state that PRGs may be expressed as tissue concentrations or sediment concentrations (note this is consistent with text in Section 3.2 of the FSWP).</p>	<p>The revised language should say “and/or” sediment concentrations.</p> <p>Change the last section of the definition to read as follows:</p> <p>For the FS, PRGs will likely be expressed as tissue, sediment and surface water concentrations for the risk drivers, and will be established considering risk-based threshold concentration (RBTCs), ARARs, background concentrations, and PQLs.</p>	<p>Text revised to state “...expressed as tissue, sediment, and/or surface water concentrations...”</p>	<p>The text in Section 3.2 should also be revised to match the revised text in Section 1.2.1 (Section 3.2, bottom of page 3-2 to top of page 3-3).</p>
17	Section 1.2.2, Page 1-10	<p>Please remove the phrase “the substantive treatability study requirements of the AOC and SOW have been met through” and instead state that “several bench-scale tests, pilot tests, and removal actions have been undertaken to date by....”</p>	<p>Text was revised as requested in comment. A statement was added following the bullets to clarify that no other bench-scale tests or pilot tests are planned to complete the FS.</p>	<p>Please add the word “currently” before planned in the statement “no other bench-scale tests or pilot tests are planned....”</p>	<p>Text revised as requested.</p>	<p>The text was revised as requested. However, this change also needs to be made in Section 4.2 (page 4-4, last paragraph, first sentence).</p>

New Comments on Revised FSWP Dated August 6, 2014			CPG 12/23/2014 Response	Assessment of Response
7	Page 3-5, Section 3.2.3, Second paragraph, First sentence	<p>The document makes the following statement: "Consistent with USEPA (2002b) guidance on use of background in remediation, risk-based PRGs that are below natural or anthropogenic background are generally not used to establish final cleanup levels."</p> <p>This statement is not made in the referenced guidance document. The guidance actually states "Generally, under CERCLA, cleanup levels are not set at concentrations below natural background levels. Similarly, for anthropogenic contaminant concentrations, the CERCLA program normally does not set cleanup levels below anthropogenic background concentrations."</p> <p>The guidance document does not make any reference to PRGs. Please revise accordingly.</p>	As discussed during the EPA/CPG FSWP teleconference on 11/7/14, the definition was revised to directly quote the guidance, and the discussion of the process of developing PRGs, including consideration of background, will be retained.	The first instance of the word "background" is omitted from the quote from the guidance in the revised text.